

Serial No. 10/064,752
Filed: 08/13/02
Page 2 of 14

Examiner: Theresa T. Snider
Group Art Unit: 1744

Amendments to the Specification

Please amend paragraphs [0054], [0078], [0087], [0090], [0096], [0102], [0108] and [0112] as shown below:

[0054] Each shell half 32, 34 has a pair of spaced, parallel housing ribs 58, 70 that are integrally molded along three sides to a lower wall 60, ~~the~~ a sidewall 62, and the upper wall 64 below the handle portion 48. The housing ribs 58, 70 serve as reinforcement members for the shell halves 32, 34 and also define an internal impeller compartment 66 that houses a vacuum impeller assembly 268 (see FIG. 15). Housing rib 70 includes a semi-circular opening 72 for fluidly connecting internal compartment 66 to air-liquid separator assembly 36. Rib 58 also includes a semi-circular opening 59 that receives a bushing 73 receiving the front shaft 74 of the motor 54. Preferably, the openings 59, 72 are collinear with each other.

[0078] The rear chamber section 192 comprises an outer shell 220 and an integrally molded conduit 222. A locating boss 227 is formed on a rearward portion of outer shell 220 to provide alignment between air-liquid separator 36 and housing 22 during assembly. Conduit 222 comprises an outer wall 221, a working air inlet 223 positioned inside the interior chamber 212, and, at a second end, a working air outlet 224 intersecting the outer shell 220 at an integrally molded collar 225. The collar 225 is adapted to be received in the semi-circular openings 72 of front housing ribs 70 to fluidly connect interior chamber 212 of the air-liquid separator assembly 36 with internal compartment 66 of the housing 22.

[0087] A vacuum motor 54 is located within the housing 22 within ~~an~~ the internal compartment 67 defined behind ~~a~~ the rib 58 defining a rear wall of impeller compartment 66 on the interior of the housing 22. A front portion of the motor 54 is substantially supported by shaft 74 and bushing 73, with a rear portion of the motor supported by a motor mounting base 75 held by internal ribs of the housing formed for that purpose. The aforementioned front impeller assembly 268 is connected to the shaft 74 of the vacuum motor 54 for rotational movement within the

Serial No. 10/064,752

Filed: 08/13/02

Page 3 of 14

Examiner: Theresa T. Snider

Group Art Unit: 1744

impeller compartment 66. The vacuum motor 54 is electrically connected to a power source such as a battery 52 through a switch 50 located in the upper handle portion 48 of the housing 22.

[0090] Referring to FIGS. 2, 3, 12 and 16, an agitator in the form of a rotating brush assembly 24 is mounted to the air-liquid separator assembly 36 and positioned adjacent to the rear of suction nozzle opening 208. The brush assembly 24 comprises upper and lower brush housings 286, 284, first and second end caps 288, 290, ~~an~~ the electric brush motor 56, a brush roll 292 and associated connecting members as will be further described. Lower brush housing 284 further comprises a cavity 285 in which brush roll 292 is free to rotate. The brush roll 292 rotates about an axis parallel to the longitudinal axis of the suction nozzle opening 208.

[0096] The end caps 288, 290 are preferably fastened to the lower brush housing 284 by installing threaded fasteners in the bosses in a well known manner to secure the end caps to the lower brush housing 284. An interior surface of the end caps 288, 290 creates a the bearing surface 294. The bearing surface 294 communicates with a the brush bushing 322, which is in communication with a the brush shaft 324.

[0102] In the preferred embodiment, the recovery tank is designed to have a capacity of about 20 ounces, whereas the solution tank has a capacity of about 8 ounces. It is contemplated that with normal use of the hand-held deep cleaner, the liquid collected in the recovery tank will be eight ounces or less before emptying. Further, if the deep cleaning machine is held vertically for cleaning vertical surfaces for example, the liquid will collect principally in the recovery tank assembly 186 and ordinarily will not enter the air inlet 272 in the air conduit. The recovery tank assembly 186 is disengaged from the portable hand-held deep cleaner 20 by depressing the latch 246 on the forward end 234 of the recovery tank assembly 186. The recovery tank assembly 186 is then free to rotate on a the back flange 260 until the flange clears the groove 262 in the housing 22 and allows the recovery tank assembly 186 to be removed. It will be apparent that the recovery tank assembly 186 is removable without also removing the air-liquid separator assembly 36, which remains fixed to the housing 22.

Serial No. 10/064,752
Filed: 08/13/02
Page 4 of 14

Examiner: Theresa T. Snider
Group Art Unit: 1744

[0108] Referring to FIG. 22 in a further embodiment of the recovery tank 186 as shown in FIGS. 1-3,, the capacity indicia comprise a horizontal line 352 molded into the sidewall 236. In this embodiment, the entire surface of the sidewall 236 is transparent.

[0112] Referring to FIG. 26, a further embodiment of the brush assembly as shown in FIG 16 comprises two brush rolls 370 and 374 with bristles 325 located parallel to one another. The brush belt 302 passes from the brush motor gear 298, under the first brush roll gear 368 on the first brush roll 370, then under the second brush roll gear 372 of the second brush roll 374, to an idler pulley 376 and then back to the brush motor gear 298. The brush rolls are thus caused to rotate in opposite directions, towards each other, such that debris is agitated and lifted from the surface.